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PROVISIONAL SPECIFICATION.

Improvements in Anatomical Models and Diagrams.

I DAVID THORPE LEE of 1 Elm Tree Road, St. John's Wood in the County of Middlesex, Artist, do hereby declare the nature of this invention to be as follows:—

This invention relates to anatomical models and diagrams which are constructed in movable parts or pieces and the principal object thereof is to support and connect
5 such parts that they may be connected or hinged upon a common axis so that they may be folded back from the main portion of the model to disclose the parts thereunder.

In applying this invention to an anatomical figure the parts are held upon brackets
10 pivoted at suitable places on a rod outside the limits of the model preferably a vertical rod placed at the side thereof. The brackets may be bars having bosses encircling the rod aforesaid and supported from slipping thereon by distance sleeves between the respective bosses. The parts or organs on the bars may be removable therefrom.

In such a model or figure the outer shells being folded back on the rod as an axis
15 the inner parts may each in its order be folded back and will occupy their relative position to those already folded back. The organs may be arranged themselves in parts hinged to each other.

In applying this invention to embossed or plain printed cards or sheets. The
latter will be arranged book fashion and each successive sheet will represent a
20 view of the remainder of the figure or model after supposed removal of the organs or parts folded over on the preceding pages.

Thus each page will represent in itself a complete diagram.

Such manner of arranging diagrams gives thereto greater strength and durability than was heretofore attained with one main diagram with organs or parts hinged on various places thereof.

25 Dated this 14th day of July 1888.

HERBERT & Co.,
Agents to Applicant.

COMPLETE SPECIFICATION.

Improvements in Anatomical Models and Diagrams.

I DAVID THORPE LEE of 1 Elm Tree Road, St. John's Wood London N.W. in the County of Middlesex Artist do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement :—

This invention relates to anatomical models and diagrams which are constructed in 5 movable parts or pieces and the principal object thereof is to support and connect such parts that they may be connected or hinged upon a common axis so that they may be folded back from the main portion of the model to disclose the parts thereunder.

A further object is to construct a strong and useful model for instructive purposes 10 in which the separate organs or certain groups thereof may be detachable from their supports for separate use.

A further object is to so hinge and arrange the various supports of the parts that the model may be opened piece by piece and each piece in its order folded back from the main portion of the model in such a manner as to take its relative place with the 15 other previously moved portions.

The following is an explanation of the invention as applied to a model of a trunk of a man and the organs therein. Reference being made to the accompanying drawing which shows the model open in front elevation certain parts being folded back.

The principal part of the invention consists in hinging all organs or groups of 20 organs or parts or groups of parts on the same common axis but so that they are held at such distances therefrom as to maintain their relative place in the model.

It will thus be understood that as the organs or parts are folded back they each arrive into their relative place with regard to those organs or parts previously folded back. Such a model therefore demonstrates the relative position of the parts as seen 25 from the rear as well as from the front. Thus in the accompanying drawing A is the front half of the outer skin, B the front half of the muscular tissues *etc.*, C is the front half of the ribs, D the front portion of the diaphragm, E represents the lungs they being cut vertically to show internal construction thereof E¹ E² the front portions being hinged to rear portion. F is the heart connected as a part to the lungs E 30 but detachable therefrom. G is the stomach, H the liver J the intestines. G H J may be all as one part hinged to each other, the liver is preferably in two parts and front portion of the intestines may be hinged to the rear portion, K is the rear wall of the abdominal cavity, L is the main portion of the mould, being the back of the ribs *etc.* and various bones, M is the rear half of the diaphragm, N is the rear half of 35 the skin.

The method of hinging and supporting the parts is as follows: The main portion L may be fixed to a suitable base and continued laterally as at L¹ to support a vertical rod *a* forming the hinge pintle and extended for strength over the top of the model down to the opposite side. This rod is preferably made of iron and covered with 40

Lee's Improvements in Anatomical Models and Diagrams.

brass tubing. Each part or group of parts is supported upon a lateral arm *b* integral with a boss *c* threaded on the rod *a*. To support each arm at its proper height there are inserted on the rod between the boss pieces of tubing or sleeves *d* which may be integral with the respective boss *c* above or below them. Thus each arm forms a
 5 hinge pivoted on the rod *a* and separately movable. The larger or outer portions of the model are hinged twice to the rod on the one side and when closed are fastened by hooks to the other portion of the rod *a*.

The separate parts are preferably made of papier maché coloured. Some of the parts more especially the organs having a substantial thickness and capable of being
 10 supported as hereinafter shown are detachable, for instance the lungs or the intestines.

The arm *b* supporting the same terminates in a spike or pintle *b*¹ fitting into a socket in the organ.

To prevent the organ being thrust too far on the pintle there may be a flange *b*² on the arm to butt against the face of the organ (see the support of the intestines). Such
 15 organ when folded out may be taken bodily from the model and replaced. Furthermore provision must be made to permit of the removal or swinging out from the body of the model of such organs or parts as overlap other parts. Thus in the model represented the rear part of the diaphragm *M* is integral with the part *L* and the lungs *E* project downward behind the diaphragm. To permit the removal of the
 20 lungs therefore the pintle *b*¹ on the arm *b* supporting the same is directed slightly upward and the lungs swing thereon as on a pivot. Thus in moving them the upper portion of the lungs is drawn outward and downward until the rear part is free to pass over the crown of the diaphragm. For finish and also securing of the model when closed there is fixed on each of the outer skins *A* and *N* a half oval piece of
 25 wood *e* *e*¹ respectively cut out to fit the lower edge of the skin. These in the example extend at one end to the rod *a* and form the arms for the hinging of the skins, their other ends abut when closed and being provided with a suitable lock serve to secure the model. The back skin *N* folds back from the model. This piece *N* as well as the pieces *A* and *B* being large and serving as covers more or less for the parts are
 30 connected when closed by hooks adapted to catch around the opposite part of the rod *a*. These hooks are pivoted on short flat plates.

In applying this invention to embossed or plane printed cards or sheets. The latter will be arranged book fashion and each successive sheet will represent a view of the
 35 remainder of the figure or model after supposed removal of the organs or parts folded over on the preceding pages. Thus each page will represent in itself a complete diagram. Such manner of arranging diagrams gives thereto greater strength and durability than was heretofore attained with one main diagram with organs or parts hinged on various places thereof while the main principle of the invention remains the same as in the case of the model.

40 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is.

In anatomical models and diagrams :—

1. The combination of separate parts hinged upon a common axis.
 2. The combination of separate parts with arms hinged upon a common axis
 45 supporting said parts.

3. The combination of separate detachable parts with arms supporting said parts said arms hinged upon a common axis.

4. The combination of separate parts sockets in said parts, arms pivoted on a common axis and pintles on said arms engaging in said sockets.

50 5. The combination of separate parts sockets in said parts, arms pivoted on a common axis said arms terminating in pintles for engaging in said sockets and flanges on said arms for the purpose set forth.

6. The combination of an anatomical model comprising separate parts a rod connected to one of said parts arms connected to said other separate parts and pivoted on
 55 said rod with distance sleeves between said arms on the rod.

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7. A main stationary portion and rod in connection therewith in combination with movable organs or parts arms pivoted on said rod and supporting said organs.

8. The combination of a main stationary portion a rod in connection at two points therewith, interior movable parts, arms pivoted on said rod and supporting said interior parts outer enclosing parts hinged each at two points on said rod. 5

9. The combination of a main stationary portion a base therefor a rod arranged vertically on one side of said portion passing over the same and descending vertically on the other side of said portion, inner movable parts, arms pivoted on one side of said rod and supporting said inner parts in their relative position, distance sleeves on said rod between the arms, outer parts forming coverings in detachable halves pivoted 10 on the one side of said rod each in two places and hooks on said outer parts adapted to engage upon the portion of the rod remote from the pivots of the parts substantially as set forth.

10. A series of diagrams showing successive stages after removal of organs or parts said diagrams hinged or together on a common axis substantially as set forth. 15

Dated this 24th day of July 1888.

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[This Drawing is a reproduction of the Original on a reduced scale]



